Claims

1. A method for disengaging a semiconductor die from a film comprising:
   forming a plurality of dice on a semiconductor substrate;
   attaching a bottom surface of the semiconductor substrate to a film
   dicing the semiconductor substrate into a plurality of individual die, wherein a bottom surface of the plurality of individual die remains attached to the film;
   disengaging a semiconductor die from the film, wherein disengaging further comprises:
      placing the plurality of individual die on an anvil;
      aligning a semiconductor die over an opening in the anvil;
      projecting a blade through the opening in the anvil to facilitate separation of the semiconductor die from the film, wherein the blade has a surface for disengaging the semiconductor die from the film that is inclined relative to a bottom surface of the semiconductor die; and
      lifting an edge portion of the semiconductor die above a surface of the anvil with the blade to facilitate disengagement the semiconductor die from the film.

2. The method of claim 1, wherein the semiconductor die is further characterized as gallium arsenide semiconductor die.

3. The method of claim 2, wherein a thickness of the semiconductor die is less than approximately 63.5 microns.

4. The method of claim 3, wherein a thickness of the semiconductor die is less than approximately 25.4 microns.

5. The method of claim 1, wherein the blade extends along more than one axis of the semiconductor die.

6. The method of claim 1, wherein the blade is slotted.

7. The method of claim 1, wherein the blade is oriented diagonally with respect to one of a length and width of the semiconductor die.

8. The method of claim 1, wherein a radius of a surface of the blade contacting the adhesive tape is approximately 127 microns.

9. The method of claim 1, further comprising picking up the semiconductor die after the step of lifting, wherein picking up the semiconductor die includes completely detaching the semiconductor die from the film.

10. The method of claim 1, wherein the film is further characterized as an adhesive tape.

11. An apparatus for disengaging a semiconductor die from a film comprising:

a blade that has a surface for disengaging the semiconductor die from a film, wherein the blade extends along an axis of the semiconductor die and is inclined relative to a bottom surface of the semiconductor die.

12. The apparatus of claim 11, wherein the semiconductor die is further characterized as gallium arsenide semiconductor die.

13. The apparatus of claim 12, wherein a thickness of the semiconductor die is less than approximately 63.5 microns.

14. The apparatus of claim 13, wherein a thickness of the semiconductor die is less than approximately 25.4 microns.

15. The apparatus of claim 11, wherein the blade extends along more than one axis of the semiconductor die.

16. The apparatus of claim 11, wherein the blade is slotted.

17. The apparatus of claim 11, wherein the blade is oriented diagonally with respect to one of a length and width of the semiconductor die.

18. The apparatus of claim 11, wherein a radius of a surface of the blade contacting the adhesive tap is approximately 127 microns.

19. An apparatus for separating semiconductor die from an adhesive tape comprising:

a base having a planar surface for supporting a backside of a semiconductor substrate that has been attached to a film and separated into individual semiconductor die, wherein the base further includes an opening, and wherein a position of the opening corresponds to a position of the semiconductor die;

a plunge-up blade mechanically coupled to a blade holder, wherein the plunge-up blade cooperatively moves through the opening to contact the adhesive tape and assist in separating the semiconductor die from the adhesive tape, wherein the plunge-up blade has a surface for disengaging the semiconductor die from the adhesive tape that is inclined along a length of the plunge-up blade; and

a means for picking up the semiconductor die from the film after the plunge-up blade has moved through the opening.

20. The apparatus of claim 19, whereby moving the plunge-up blade through the opening while the semiconductor die is positioned over the opening causes displacement of the film and lifts the semiconductor die at an angle relative to the planar surface of the base and coincident with an angle of the plunge-up blade, whereby lifting promotes disengagement of the semiconductor die from the film while distributing a force exerted by the plunge-up blade across a bottom surface of the semiconductor die thereby resulting in a reduced concentrated stress being exerted against

the semiconductor die during lifting and fewer fractures of the semiconductor die.